

Remarks

A. Amendments

The paragraph beginning at page 14, line 8 of the specification is amended to correct obvious spelling errors.

The component table at page 53 of the specification is amended to correct obvious errors.

Component reference numbers C01, C02, C03, C04, C07 and C09 are amended to C1, C2, C3, C4, C7 and C9, respectively, in order to make the numbering consistent with the working examples.

The row referencing C6 has been added. "An amendment to correct an obvious error does not constitute new matter where one skilled in the art would not only recognize the existence of the error in the specification, but also the appropriate correction." See MPEP at §2163.07. In support of the amendment, each of Examples 6-9 reference comparative compositions containing C6, and describe those compositions as "comparative high load potassium glyphosate formulations containing either an etheramine or an etherdiamine surfactant, or an etheramine/etherdiamine blend, each with a glyphosate a.e.:surfactant loading of 4:1." See, for instance, Example 7 at page 68, lines 1-4. In reference to Table 7b at page 69, line 11 to page 71, line 24, one skilled in the art would recognize that C6 clearly refers to high load potassium glyphosate in the formulations containing: (a) C6 and C9 (a diamine surfactant) having a C6:C9 ratio of 4:1; (b) C6 and C10 (a diamine surfactant) having a C6:C10 ratio of 4:1; (c) C6 and C7 (an ethoxylated alkyl etheramine surfactant) having a C6:C7 ratio of 4:1; (d) C6, C7 and C9 at a C6:(C7 + C9) ratio of 4:1; (e) C6, C7 and C10 having a C6:(C7 + C10) ratio of 4:1; and (f) C6, C7 and C9 having a C6:(C7 + C9) ratio of 4:1. Applicants respectfully submit that one skilled in the art would recognize

the omission of C6 from the component table as an obvious error and would also recognize that C6 clearly refers to high load potassium glyphosate. Therefore the amendment to the specification meets the requirement set out in MPEP §2163.07 and should be entered.

B. Rejection Under 35 U.S.C. 103(a)

Reconsideration is requested of the rejection of claims 3-8, 10, 12-40, 42-47, 49 and 51-55 under 35 U.S.C. §103(a) as being unpatentable over the combined teachings of **Wright** et al. (U.S. Patent No. 5,750,468), **Griffiths** et al. (U.S. Patent No. 6,248,695), **Stridde** et al. (U.S. Patent No. 6,420,311) and **Forbes** et al. (U.S. Patent No. 5,668,085).

In order to establish a *prima facie* case of obviousness, the prior art reference(s) must teach or suggest all the claim limitations, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings and obtain the claimed invention and there must be a reasonable expectation of success. See MPEP §2142. Applicants respectfully submit that the Office has failed to establish a *prima facie* case of obviousness with respect to the claimed invention.

Aqueous pesticide concentrates are often difficult to formulate because many surfactants can be incompatible with water-soluble herbicides. This is especially true of some glyphosate salts, such as potassium glyphosate. Cationic etheramine surfactants enhance the efficacy of such pesticide compositions. While certain etheramines are exceptionally compatible with glyphosate formulations, it is not always possible to make a fully loaded formulation with very high

pesticide loadings. A hydrotrope can be added to such compositions to stabilize them against phase separation. Ordinary hydrotropes, however, add to the cost and reduce the total possible loading without increasing biological performance. It has been discovered that various diamine, triamine and other polyamine surfactants are effective in stabilizing pesticide compositions and in compatibilizing etheramine surfactants within the compositions.

The pesticide compositions of the invention comprise a water-soluble pesticide and a cationic surfactant composition. The cationic surfactant composition comprises at least two surfactants. Preferably, one surfactant is an etheramine surfactant, and the other is preferably a compatibilizing surfactant. The compatibilizing surfactant is preferably a diamine, triamine or polyamine.

The compatibilizing surfactants may also function as co-surfactants with the etheramine surfactants. Hence, the compatibilizing surfactants may advantageously function as both surfactants and hydrotropes. This property is especially beneficial because it affords a net reduction in excipient loading with a concomitant increase in active loading capacity.

In one embodiment of the invention, it has been found that in an aqueous concentrate formulation, an unexpectedly high weight/volume concentration of glyphosate potassium salt can be obtained in the presence of the surfactant composition of the invention, with the resulting composition exhibiting acceptable, or in some instances improved, viscosity and storage stability characteristics, and with herbicidal efficacy similar to or greater than commercial glyphosate formulations.

Independent claim 3 is directed to an aqueous pesticidal composition comprising at least one pesticide and an

agriculturally useful amount of a cationic surfactant composition comprising a first surfactant selected from a Markush group including the elected etheramine of formula (5), and a second surfactant selected from a Markush group including the elected diamine of formula (6). Independent claim 42 is likewise directed to an aqueous pesticidal composition comprising at least one pesticide and an agriculturally useful amount of a cationic surfactant composition comprising at least one etheramine surfactant of formula (5) and at least one diamine surfactant of formula (6). Claims 4-8, 10, 12-40, 52 and 53 depend directly or indirectly from claim 3. Claims 43-47, 49, 51, 54 and 55 depend directly or indirectly from claim 42. All the pending claims have been examined only insofar as they read on an aqueous pesticidal composition comprising a surfactant composition comprising at least one elected etheramine surfactant of formula (5) and at least one elected diamine surfactant of formula (6).

Wright describes herbicidal compositions comprising glyphosate or a salt thereof and certain etheramine surfactants, including alkoxyated tertiary etheramines, alkoxyated or non-alkoxyated quaternary etheramines and alkoxyated etheramine oxides. Some of the specific etheramine surfactants disclosed by Wright fall within formula (5) as defined in the pending claims. Wright does not teach or suggest a surfactant composition comprising the combination of the disclosed etheramine surfactants with a diamine of formula (6) as called for in the pending claims. In fact, Wright specifically teaches away from the claimed invention in that if a second or co-surfactant is included in the composition, the second surfactant is selected from certain nonionic surfactants such as primary alcohol ethoxylates, secondary alcohol ethoxylates, alkyl esters of sucrose or sorbitan or alkyl polyglucosides (col. 8, lines 35-

41; col. 12, lines 31-33; and Example 17). Accordingly, if anything, Wright would motivate one skilled in the art to combine the disclosed etheramine surfactants with a nonionic surfactant such as a primary alcohol ethoxylate, a secondary alcohol ethoxylate, an alkyl ester of sucrose or sorbitan or an alkyl polyglucoside, and not a diamine surfactant of formula (6) as claimed.

Griffiths describes herbicidal compositions comprising glyphosate or a salt thereof and a surfactant component comprising certain diamine surfactants, specifically alkyldiamine tetraalkoxylate surfactants. The herbicidal compositions are said to exhibit low aquatic toxicity as compared to an equivalent composition comprising an ethoxylated tallowamine as the surfactant component. Some of the most preferred ethylene diamine alkoxyates of formula (IV) disclosed by Griffiths fall within formula (6) as defined in the pending claims. However, Griffiths does not teach or suggest a cationic surfactant composition comprising the combination of the disclosed alkyldiamine tetraalkoxylate surfactants with an etheramine of formula (5) as called for in the pending claims. Like Wright, Griffiths teaches away from the claimed cationic surfactant composition including an etheramine surfactant combined with a diamine surfactant. Specifically, Griffiths teaches using the disclosed alkyldiamine tetraalkoxylate surfactant in conjunction with a nonionic alkyl glycoside or an alkylpolyglycoside surfactant to improve the compatibility of the alkyldiamine tetraalkoxylate surfactant with the glyphosate and provide a herbicidal composition said to have an activity comparable to a glyphosate composition comprising the standard ethoxylated tallowamine surfactant (col. 4, line 66 to col. 5, line 19). Moreover, to the extent that a surfactant in addition to the

disclosed alkyldiamine tetraalkoxylate surfactant is included in the herbicidal composition, Griffiths teaches that such additional surfactant have a low aquatic toxicity such as a alkyl glycoside or an alkylpolyglycoside surfactant (col. 6, lines 39-43). Applicants believe that the aquatic toxicity exhibited by alkoxyated etheramine surfactants of the type defined in formula (5) of the pending claims is comparable to that of the commonly used ethoxylated tallowamine surfactants cited in Griffiths as having significant aquatic toxicity. Accordingly, combining the disclosed alkyldiamine tetraalkoxylate surfactant of Griffiths in a cationic surfactant composition further including an etheramine surfactant is not only not disclosed or suggested, such combination would be contrary to the teaching and objectives of the reference of providing a herbicidal glyphosate compositions exhibiting low aquatic toxicity.

Stridde describes herbicidal compositions comprising a herbicide such as a glyphosate salt and a surfactant component comprising certain alkoxyated polyether diamines, esterfied alkoxyated polyether diamines and mixtures thereof similar to the diamines of formula (6) as defined in the pending claims. Although Stridde teaches blending the alkoxyated polyether diamines and/or esterfied alkoxyated polyether diamines with various formulation aids such as neutralizing agents, water and anti-freeze agents, nowhere does the reference teach or suggest that the alkoxyated polyether diamine or esterfied alkoxyated polyether diamine surfactants are suitable for combination with a co-surfactant, particularly, an etheramine surfactant of formula (5) as called for in the pending claims. Indeed, Stridde defines the term "surfactant composition" to mean "the surfactants of the present invention blended with one or more formulation aids" (col. 7, lines 2-4). There is no mention of the possibility of a

co-surfactant in the alkoxyated polyether diamine or esterfied alkoxyated polyether diamine surfactant composition of Stridde.

Forbes does not describe or suggest either an etheramine surfactant of formula (5) or a diamine surfactant of formula (6), much less an aqueous pesticidal composition including a cationic surfactant composition comprising a combination of such surfactants as called for in the pending claims. Forbes describes herbicidal concentrate compositions comprising a salt of glyphosate, an alkoxyated alkylamine surfactant and optionally an inorganic ammonium salt. The disclosed alkoxyated alkylamine surfactants do not contain an ether linkage.

Thus, contrary to the assertion in the Office action, one of ordinary skill in the art would not have combined the etheramine surfactants of Wright with either the alkylamine tetraalkoxylate surfactants of Griffiths and/or the alkoxyated polyether diamines or esterfied alkoxyated polyether diamines of Stridde since the cited references not only fail to teach or suggest such combination or modification, but actually teach away from the claimed cationic surfactant composition. Both Wright and Griffiths teach that a nonionic co-surfactant such as an alkylpolyglucoside or an alcohol ethoxylate is combined with the disclosed etheramine surfactant (Wright) or diamine surfactant (Griffiths) and Stridde fails to teach or suggest the suitability of combining the disclosed alkoxyated polyether diamines or esterfied alkoxyated polyether diamines with any co-surfactant.

Accordingly, applicants respectfully submit that the Office has failed to provide sufficient reason why one skilled in the art, in view of the entire teachings of the cited references, would have been motivated to combine or modify those references and arrive at the claimed invention with a reasonable expectation

of success such that a *prima facie* case of obviousness is lacking.

Although a *prima facie* case of obviousness is lacking, the specification discloses evidence of enhanced performance obtained by the claimed cationic surfactant composition. At least Examples 6, 7 and 9 demonstrate that herbicidal formulations containing etheramine and diamine surfactant blends of the type called for in independent claims 3 and 42 have enhanced herbicidal performance as compared to the formulations containing either surfactant alone. (See the specification at page 67, lines 17-18; page 71, lines 25-26; and page 80, lines 19-20). Evidence of superior results not disclosed or suggested in the prior art is further evidence of non-obviousness.

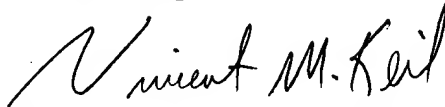
In view of the above, the invention defined in independent claims 3 and 42 is respectfully submitted as patentable over the cited references. Claims 4-8, 10, 12-40, 52 and 53, which depend directly or indirectly from claim 3, and claims 43-47, 49, 51, 54 and 55, which depend directly or indirectly from claim 42, are likewise patentable over the cited art for the reasons stated with respect to claims 3 and 42 and by reason of the additional requirements they introduce.

C. Conclusion

In light of the foregoing, applicants request entry of the amendments and withdrawal of the rejection under 35 U.S.C. §103(a), and solicit allowance of the pending claims. The

Examiner is invited to contact the undersigned attorney should any issues remain unresolved.

Sincerely,

A handwritten signature in cursive script that reads "Vincent M. Keil". The signature is written in dark ink and is positioned above the typed name and address.

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